

## Reduce RSI in Library Workers Using Acupressure with Wrist Brace

### RSI is a Problem in librarian community.

Repetitive Strain Injury (RSI) is caused from prolonged repetitive movement in hands, wrists, arms and shoulders. At Toronto Public Library, workers are under risk of RSI due to repeated unnatural postures in shelving and increased workload. Staff are suffering from pain in hand, arm and shoulder after handling books for a long time. With increasing circulation and less workforce at Toronto Public Library, remaining workers have insufficient time to recover from fatigue. This design addresses the problem by improving the efficiency of their break.

### Massage trigger points to relief pain in shortest time.

One of solutions to RSI problem suggested by doctors is acupressure. It is based on the empirical Chinese Medicine System which suggests that there are trigger points related to each sickness [1]. The theoretical explanation of acupressure in reducing RSI is that when trigger points are stimulated, neurochemicals called endorphins are released helping to relief pain [2]. Patients receiving such treatment usually go to professional clinics, or with the help of other people. The objective of this design is to embody the concept into a wrist brace to make it portable and cheaper than service charges at clinics. User can choose from a variety of wrist braces in the market and they are portable and easy to wear. The trigger points are pressed by massage head made of stable stainless steel coated with silica gel to apply a significant force while giving a smooth touch.

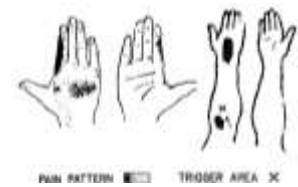


Figure 1 Trigger points related to pain in hand and arm [2].

### Massage heads are attached to wrist brace using snap fasteners.

Massage heads can be applied to and removed from wrist braces easily with the snap fasteners. The massage heads will be installed at the point shown in figure 1 to treat related pain in shelving works [2]. Massage heads are adjustable: user can also apply pressure to other trigger points to treat other pains after consulting professional acupuncturist. Library workers can wear the wrist brace during work or after work at their own convenience. By wearing wrist brace, librarian workers are able to take more efficient break to recover from fatigue in hand and arms from shelving work.



Figure 2 Massage head attached to snap fastener.



Figure 3 Wrist brace with massage heads.

The cost of each massage head is no more than \$ 2 [3], which is affordable to all library workers. With massage head made of stainless steel, the design is expected to have a long life span. The snap fastener adds more adjustability to the function and makes replacement easy. In general, this design helps reduce fatigue in RSI in long term and does not impose user to other inconveniences. It takes user into consideration and helps them relief pain in workplace, especially from shelving works.

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